Behaviour Dynamics in Social Networks

- **Vakcode:** X_400113
- **Periode:** Periode 2
- **Credits:** 6.0
- **Voertaal:** Engels
- **Faculteit:** Faculteit der Exacte Wetenschappen
- **Coördinator:** prof. dr. J. Treur
- **Examinator:** prof. dr. J. Treur
- **Docent(en):** prof. dr. J. Treur
- **Lesmethode(n):** Hoorcollege, Practicum
- **Niveau:** 400

Doel vak

To learn how to identify, specify and predict different types of mental and social processes; to understand how individual and social behaviour emerges from mechanisms known from Cognitive, Affective and Social Neuroscience, and from Cognitive and Social Sciences; to be able to construct network models for mental and social interaction processes; to perform analysis based on these models using Network-Oriented Modeling software tools and empirical data.

Inhoud vak

This course is a multidisciplinary course, also accessible for students from other disciplines such as Neuroscience, Psychology or Social Sciences. Behaviour dynamics occurs in different forms, contexts and complexity. Complexity can occur in the mental processes within persons or in social interaction processes, or in both. Both types of processes can be adaptive: mental processes can change due to learning, and social interactions can also evolve over time. Theories and findings from Cognitive, Affective and Social Neuroscience and also from Cognitive and Social Sciences are presented and used to get insight in the underlying mechanisms that form a solid scientific basis for modelling of these processes. In the course a Network-Oriented Modeling approach based on temporal-causal networks is used to model both these internal mental processes (as networks of mental states) and social interaction processes (as social networks). During the course several examples are studied. These examples cover imagination and dreaming by internal simulation, integration of emotions in all kinds of mental and social processes, learning of emotion regulation, ownership and attribution of actions, empathic social responses, empathic joint decision making, development of shared understanding and collective action, and different principles for evolving social networks. The dynamics of such processes is modeled, simulated and analysed (including verification and validation) in this course using dedicated and easy to use modelling environments for Network-Oriented Modeling; no programming is needed. In the last few weeks of the course a more ambitious final assignment is addressed, which can be worked out to a paper that may be submitted to an international conference where it could be presented and provide a publication.

Onderwijsvorm

Combination of lectures and practical assignments.

Toetsvorm

Practical assignments.

Literatuur

Treur, J., Network-Oriented Modeling: Addressing Complexity of Cognitive, Affective and Social

Interactions. Series on Understanding Complex Systems, Springer Publishers, October 2016.

In digital form free downloadable from the VU.

Aanbevolen voorkennis

Some background in modeling.

Doelgroep

mAI and multidisciplinary master studies from Psychology, Neurology and Social Sciences